

Cumulative Risk Assessment: Collaborative Efforts for a Research Strategy

Audrey Galizia

Toxicologist

U.S. EPA Office of Research and Development/National Center for Environmental Assessment (NCEA)/Cincinnati Division

(732) 906-6887

galizia.audrey@epa.gov

Authors: A. Galizia¹, G. Bangs², M. Callahan³

¹U.S. EPA NCEA/Cincinnati

²U.S. EPA NCEA/Risk Forum

³U.S. EPA Region 6/Office of the Regional Administrator

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Understanding the accumulation of risks from multiple environmental and non-environmental stressors is of paramount importance as we advance the science of risk assessment. Legislation, such as the Food Quality Protection Act of 1996, has directed the U.S. Environmental Protection Agency (U.S. EPA) to move beyond single chemical assessments and focus on the cumulative effects of chemical exposure. In addition, legal cases, such as those filed under the 1964 Civil Rights Act, further emphasize the need for the U.S. EPA to develop methods for cumulative risk. Assessing cumulative risk is one of the Agency's priorities. This is important for, and of great interest to, all program and regional offices. The demand for more sophisticated risk assessments has driven the need for research into cumulative risk assessment. Identification of critical information is the starting point for addressing this need. The development of a Research Strategy for Cumulative Risk Assessment is underway for this purpose: (1) Issues Papers are being developed in collaboration with outside experts and include issues such as assessing combined effects, disaggregating health and biomonitoring information, evaluating increased vulnerability due to differential exposure, and evaluating increased vulnerability due to differential preparedness. Outside collaborators consist of at least a dozen academicians, including leading experts in this area. (2) Case studies are being developed to illustrate the use of the cumulative risk assessment process, data needs, data gaps, resource needs, communication of results, the evaluation of uncertainty, and the impact of the analysis on decision-making. Developing Case Studies involves working in partnerships both within the U.S. EPA and externally with community-based groups. In this regard, collaborative relations have been established with the Tribal Science Council, the National Environmental Justice Advisory Committee (NEJAC), and the Community Action for a Renewed Environment (CARE). (3) Research Planning is also underway for cumulative risk assessment with the short-term goal of identifying critical research areas and the long-term goal of developing a Research Strategy. Some of these research areas include (a) indicators, (b) vulnerability, (c) stressors, (d) Environmental Justice, (e) genomics, (f) biomarkers, (g) uncertainty, (h) risk communication, (i) variability, and (j) integration of qualitative factors. Collaborative efforts for Research Planning include internal participation from various Agency offices and programs (NCEA, National Health and Environmental Effects Laboratory, Office of Policy, Economics and Innovation, Office of Air and Radiation, National Exposure Research Laboratory) and several of the regions. In addition, collaborations with the academic community, as well as with community-based groups, in these research areas are underway.

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